

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

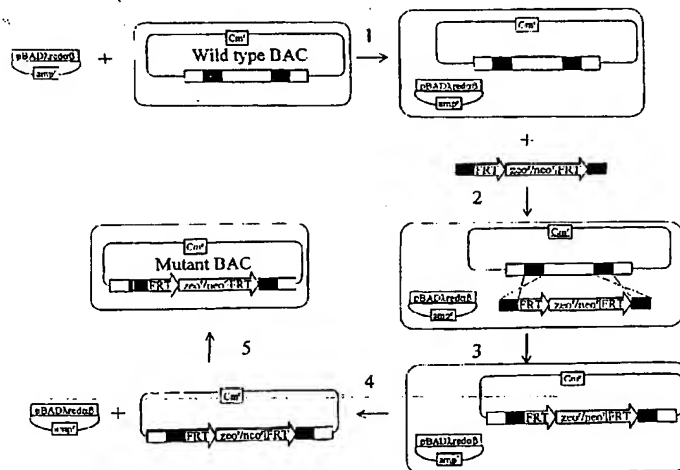
(19) World Intellectual Property
Organization
International Bureau(43) International Publication Date
12 February 2004 (12.02.2004)

PCT

(10) International Publication Number
WO 2004/013299 A2

- (51) International Patent Classification?: C12N (74) Agent: ELBING, Karen, L.; Clark & Elbing LLP, 101 Federal Street, Boston, MA 02110 (US).
- (21) International Application Number: PCT/US2003/024322 (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date: 1 August 2003 (01.08.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/400,900 2 August 2002 (02.08.2002) US
- (63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application: 60/400,900 (CON) Filed on 2 August 2002 (02.08.2002)
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- Published:
— without international search report and to be republished upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHODS FOR THE PRODUCTION OF CELLS AND MAMMALS WITH DESIRED GENETIC MODIFICATIONS



(57) Abstract: The present invention features novel methods for generating cell lines and mammals with site-specific genetic modifications of interest. The methods involve homologous recombination between an artificial chromosome having a modification of interest and an endogenous chromosome of a cell. The resulting modified cells can be used in standard methods to generate genetically modified mammals. These mammals can be used in a variety of screening methods to identify compounds useful for the treatment or prevention of disease. Additionally, cells that have been modified to eliminate a mutation associated with a disease can be transplanted into patients for the treatment of a disease.